

I. Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 30. (Canceled)

31. (New) An apparatus comprising a ball mill including disrupting particles that are not substantially spherical and comprise screw-bits, cone balls, pins, or non-spherical shot.

32. (New) A method comprising disrupting a biological sample in a ball mill loaded with disrupting particles of Claim 31.

33. (New) An apparatus comprising a ball mill including disrupting particles that are substantially spherical, which have been roughened prior to use.

34. (New) A method comprising disrupting a biological sample in a ball mill loaded with disrupting particles of Claim 33.

35. (New) The method of Claim 34, where the particles have been roughened by sanding, forming grooves within a surface of the particles, a ball peening process, an electric discharge processes, or by embedding a material within a surface of the particles.

36. (New) A method of increasing a yield of nucleic acids from a biological sample comprising disrupting the sample in a ball mill loaded with disrupting particles that are not substantially spherical instead of substantially-spherical disrupting particles of about the same size and density wherein increasing the yield comprises increasing a 28S/18S ratio.

37. (New) An apparatus comprising a ball mill including disrupting particles (a) that are not substantially spherical or (b) that are substantially spherical, which have been roughened prior to use, the ball mill including a vial with an internal grill configured to contribute to disruption.

38. (New) A method comprising disrupting a biological sample in the ball mill of Claim 37.

39. (New) A kit comprising:

- (1) disrupting particles (a) that are not substantially spherical wherein the particles comprise screw-bits, cone balls, pins, or non-spherical shot or (b) that are substantially spherical, which have been roughened prior to use; and
- (2) a lysis buffer for biological samples.

40. (New) The kit of Claim 39, further comprising a vial.

41. (New) The kit of Claim 40, the vial having an inner surface that has been roughened prior to use.

42. (New) The kit of Claim 40, the vial including an internal grill configured to contribute to disruption of a sample.

43. (New) A method comprising disrupting a biological sample in a ball mill using disrupting particles having a dimension greater than 4 mm, the method not comprising plating of yeast or bacteria.

44. (New) The method of Claim 43, wherein the particles are substantially spherical.

45. (New) The method of Claim 44, wherein the particles comprise steel spheres.

46. (New) The method of Claim 43, wherein the particles comprise diagonals or coneballs.